To: Nye, Michael[nye.michael@epa.gov]; Garland, Jay[Garland.Jay@epa.gov]; Lape, Jeff[lape.jeff@epa.gov]; Impellitteri, Christopher[Impellitteri.Christopher@epa.gov]; Jahne, Michael[Jahne.Michael@epa.gov]
Cc: Morgan, Ardra[Morgan.Ardra@epa.gov]; Adler, Jacob[adler.jacob@epa.gov]; Turgeon, Jason[Turgeon.Jason@epa.gov]
From: Ma, Cissy
Sent: Wed 7/12/2017 4:32:38 PM
Subject: Re: OLEM summary
AWG comparison.xlsx

Mike and all,

For large scale desalinization, Ex. 4 - CBI is possible. The economy of scale comes into play. AWG is a small scale operation. The water production of desalinization could be Ex. 4 - CBI We probably should compare similar scale or application.

As I am thinking of the scope and the scenarios of AWG, one thing came to mind is whether we should also include chemical analysis/monitoring on top of the pathogen study. Any of the alternative technologies we compare to all should be subject to drinking water standards. AWG should be no exception. Chemicals might not be the major issue like pathogens in AWG. But acid rain/droplets do happen (VOCs). The wear and tear of the machinery, piping will affect water quality (metal). Some subsequent filtration/oxidation and disinfection treatments may be needed. Some suggests the membrane-assisted humidity harvesting. Eventually, fouling will be an issue. This consideration will affect the treatment train needed to achieve the standards.

As to the scenarios, based on OLEM summary, here are some scenarios I am thinking of. If any of you have any suggestions or other scenarios, please let me know. I will revise the write-up as I go.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Mike, I added onto your spreadsheet with other prototypes for comparison.

Thanks,

Cissy

Xin (Cissy) Ma, Ph.D., P.E., Environmental Engineer

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Ma.cissy@epa.gov

From: Nye, Michael
Sent: Tuesday, July 11, 2017 6:07 PM
To: Garland, Jay; Lape, Jeff; Impellitteri, Christopher; Jahne, Michael; Ma, Cissy
Cc: Morgan, Ardra; Adler, Jacob; Turgeon, Jason
Subject: RE: OLEM summary

Hi folks

Please see attached a first draft summarizing the TARDEC findings and providing a natural spot to discuss the OLEM and OW findings as a bridge to justification for more work on this subject. I will do my best to sprinkle this in tomorrow. In the meantime, please check this over and in particular, the (apparent) finding that fuel to water ratios (in gallons water vs gallons diesel) in the region of Ex. 4 - CBI are being achieved at large scale desalinization plants. Is that right? Ex. 4 - CBI

Ex. 4 - CBI

See attached spreadsheet which has some of the TARDEC numbers from Figure 1 in it and my calculations for the above. I'll work on adding OW and OLEM relevant findings to the concluding section tomorrow. I received the Rocky Research SOW from TARDEC this afternoon, so we can look at how to add to this in Phase 3 by working with them. I will circulate that shortly.

Mike

Michael B. Nye PhD
Net Zero Program Manager
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US Environmental Protection Agency
T: 303 312 6986
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-----Original Message-----
From: Garland, Jay
Sent: Tuesday, July 11, 2017 6:23 AM
To: Lape, Jeff <lape.jeff@epa.gov>; Nye, Michael <nye.michael@epa.gov>; Impellitteri, Christopher <Impellitteri.Christopher@epa.gov>; Jahne, Michael <Jahne.Michael@epa.gov>; Ma, Cissy <Ma.Cissy@epa.gov>
Cc: Morgan, Ardra <Morgan.Ardra@epa.gov>; Adler, Jacob <adler.jacob@epa.gov>; Turgeon, Jason <Turgeon.Jason@epa.gov>
Subject: RE: OLEM summary

Thanks for the note and the phone call, Jeff. Than for the offer to use the Jake's write up for the document we are pulling together for Friday.
Mike (N), might want to blend the TARDEC assessment in with what Jake has produced already on background. Cissy, some of the different uses Jake discusses can be useful for the scenario planning.

I am reaching out to EDlise Packard to get the name of the OLEM contact to see if we can use elements of their document in the write-up as well.

-----Original Message-----
From: Lape, Jeff
Sent: Tuesday, July 11, 2017 6:01 AM
To: Garland, Jay <Garland.Jay@epa.gov>; Nye, Michael <nye.michael@epa.gov>; Impellitteri, Christopher <Impellitteri.Christopher@epa.gov>; Jahne, Michael <Jahne.Michael@epa.gov>; Ma, Cissy <Ma.Cissy@epa.gov>
Cc: Morgan, Ardra <Morgan.Ardra@epa.gov>; Adler, Jacob <adler.jacob@epa.gov>; Turgeon, Jason <Turgeon.Jason@epa.gov>
Subject: RE: OLEM summary

First I have seen the OLEM piece... not aware who the author is...
And attaching the piece that Jake prepared...

-----Original Message-----
From: Garland, Jay
Sent: Monday, July 10, 2017 8:46 PM
To: Nye, Michael <nye.michael@epa.gov>; Impellitteri, Christopher <Impellitteri.Christopher@epa.gov>; Jahne, Michael <Jahne.Michael@epa.gov>; Ma, Cissy <Ma.Cissy@epa.gov>; Lape, Jeff <lape.jeff@epa.gov>
Cc: Morgan, Ardra <Morgan.Ardra@epa.gov>
Subject: OLEM summary

This document contains a lot of information; cost estimates of production, potential scenarios for its use. Cissy, wonder if we can build some scenarios inventories and calculate life cycle costs for some of these possible uses?

I will try to find out if the OLEM author of this document would like to be a co-author on the project plan.

Jeff, do you happen to know the name of the OLEM rep who worked on thus?